

Remarks

Claims 1-12 are pending in the application and were rejected. By this Amendment, claims 1-5 and 7-12 have been amended. Reconsideration of the claims is respectfully requested. No new matter has been added.

Claim Objections

Claims 4 and 10-12 were objected to for minor informalities. Applicants have amended claims 4 and 10 as proposed by the Examiner. As a result, Applicants believe these objections have been cured.

Rejection Under 35 U.S.C. §112

Claims 7-12 were rejected under 35 U.S.C. § 112, second paragraph as being indefinite. Specifically, the Examiner stated that the phrases “actuating the transition of a set of electro-hydraulic brakes” in claim 7 and “de-actuating the transition” in claim 12 were unclear. In response, Applicant has eliminated these phrases from the claims. Consequently, Applicants believe this rejection has been cured.

Rejection Under 35 U.S.C. § 103

Claims 1, 4, 5, 7 and 10 were rejected under § 103(a) as being unpatentable over U.S. Patent No. 6,321,144 issued to Crombez (hereinafter “Crombez ‘144”) in view of U.S. Patent No. 6,589,134 issued to Williams et al. (hereinafter “Williams ‘134”). Independent claims 1 and 7 will be discussed separately below.

Claim 1 has been amended to recite a hybrid electric vehicle in which “the electronic brake controller actuates the electro-hydraulic brake system when vehicle rollback is detected, the brake torque is less than a first predetermined level, the accelerator torque is less than a second predetermined level, and the internal combustion engine is running.” Crombez ‘144 does not recite such a hybrid electric vehicle. Instead, Crombez ‘144 recites that when the vehicle is rolling backward the friction brakes are applied when a Total Torque

is greater than a Regeneration Limit (column 9, lines 2-8 and Figure 2, block 224) and when the Total Torque is greater than a “Zero MPH Regeneration Limit” (column 35-38 and Figure 2, block 234). Crombez ‘144 does not disclose or even remotely suggest comparing brake torque and accelerator torque to first and second predetermined levels. Williams ‘134 does not cure the deficiencies of Crombez ‘144. More specifically, Williams ‘134 discloses engaging a park interlock device to a locked position to keep a vehicle from rolling if a brake pedal is depressed (column 5, lines 10-15 and Figure 3, block 56) and does not disclose or even remotely suggest the brake and accelerator torque comparisons of the present invention. As a result, Applicants respectfully believe that the rejection of claim 1 has been overcome. Since claims 4 and 5 depend on claim 1, Applicants believe the rejection of these claims has been overcome for the same reasons.

Claim 7 has been amended to recite “determining whether a hill holding condition exists based on the vehicle rollback state output, the vehicle brake torque request output, the accelerator torque request output, the vehicle creep output, and the internal combustion engine running state output”. Crombez ‘144 does not disclose or even remotely suggest the determination of a hill holding condition based on a vehicle rollback state output, vehicle brake torque request output, accelerator torque request output, vehicle creep output, and an internal combustion engine running state output. Instead, Crombez ‘144 simply discloses implementing a rollback sub-strategy when “the vehicle gear selector is in a forward drive gear but the vehicle is rolling backward” (column 8, lines 35-37). Williams ‘134 does not cure the deficiencies of Crombez ‘144 since it does not disclose or even remotely suggest the determination of a hill holding condition, let alone the determination of a hill holding condition based on the outputs recited in claim 7. As a result, Applicants respectfully believe that the rejection of claim 7 has been overcome. Since claim 10 depends on claim 7, Applicants believe the rejection of claim 10 has been overcome for the same reasons.

Claims 2, 3, 6, 8, 9, 11 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Crombez ‘144 in view of Williams ‘134 and further in view of U.S. Patent Publication Number 2003/0214186 issued to Kinder et al. (hereinafter “Kinder ‘186”).

The rejection of the dependent claims of claim 1 and claim 7 will be discussed separately below.

Claims 2, 3 and 6 depend on amended claim 1 which is believed to be allowable for the reasons previously discussed. Moreover, Kinder '186 does not cure the deficiencies of Crombez '144 or Williams '134 with respect to amended claim 1. More specifically, Kinder '186 does not disclose or even remotely suggest comparing brake torque and accelerator torque to first and second predetermined levels when vehicle rollback is detected. Instead, the system and method disclosed in Kinder '186 "terminates if ... the velocity sensor 44 detects a vehicle velocity". In other words, the system and method in Kinder '186 does not operate when the vehicle moves. In contrast, in the present invention vehicle movement (rollback) is a prerequisite to brake application. Consequently, Applicants believe that a *prima facie* case has not been established and request that this rejection be withdrawn.

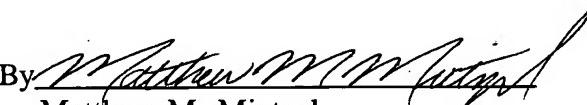
Claims 8, 9, 11 and 12 depend on amended claim 7 which is believed to be allowable for the reasons previously discussed. Moreover, Kinder '186 does not cure the deficiencies of Crombez '144 or Williams '134 with respect to amended claim 7. More specifically, Kinder '186 does not disclose or even remotely suggest the determination of a hill holding condition, let alone the determination of a hill holding condition based on the outputs recited in claim 7. Consequently, Applicants believe that a *prima facie* case has not been established and request that this rejection be withdrawn.

Conclusion

Applicants have made a genuine effort to respond to the Examiner's objections and rejections in advancing the prosecution of this case. Applicants believe all formal and substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

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